

SAC 1

3. (Twice Amended) A solid-state imaging device having an output portion connected to an output end of a horizontal transfer register, the output portion having a gate structure including an oxide film and a nitride film, the solid-state imaging device comprising:

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upper layer films allowing ultraviolet rays having a wavelength of 400 nm or less to pass therethrough; and

an organic film capable of absorbing said ultraviolet rays, said organic film being formed in such a manner as to cover a region of said gate structure including the oxide film and the nitride film, entirely shielding at least an output gate or a reset gate of an output portion, of said solid-state imaging device.

REMARKS

Claims 1-3 are pending in the application. In the Final Office Action of October 2, 2002, the Examiner made the following disposition:

- A.) Rejected claims 1-2 under 35 U.S.C. §103(a) as being unpatentable over Related Art Figure 4 in view of *Ronzani et al.*
- B.) Rejected claim 3 under 35 U.S.C. §103(a) as being unpatentable over Related Art Figure 4 in view of *Ronzani et al.* and further in view of *Haga et al.*

Applicant respectfully traverses the rejections and addresses the Examiner's disposition as follows:

- A.) Rejection of claims 1-2 under 35 U.S.C. §103(a) as being unpatentable over Related Art Figure 4 in view of *Ronzani et al.*:

Applicant respectfully disagrees with the rejection.

Applicant's claim 1 has been amended to claim a first metal made shield film and a second metal made shield film. The first metal made shield film is formed in such a manner as to cover a region of the gate structure, being disposed above a light receiving portion and a transfer portion, of said solid-state imaging device. The second metal made shield film is formed in such a manner as to cover a region of the gate structure, entirely shielding at least an output gate or a reset gate of an output portion, of the solid-state imaging device.

Claim 2 has been amended to clarify that the second metal made shield film has an opening at a position directly over a floating diffusion region of the solid-state imaging device.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW

CHANGES MADE”.

Referring to Applicant’s Figure 1B as an illustrative example, Applicant’s independent claim 1, as amended, claims a first metal made shield film 55 and a second metal made shield film 65. The first metal made shield film 55 is formed in such a manner as to cover a region of the gate structure 41, being disposed above a light receiving portion and a transfer portion 15, of said solid-state imaging device. The second metal made shield film 65 is formed in such a manner as to cover a region of the gate structure 41, entirely shielding at least an output gate 41 or a reset gate 42 of an output portion 16, of the solid-state imaging device.

Therefore, Applicant’s claimed second metal made shield film 65 entirely shields at least an output gate 41 or a reset gate 42 of the output portion 16.

This is clearly unlike Related Art Figure 4 in view of *Ronzani et al.*, which fails to disclose or suggest a metal made shield film that entirely shields at least an output gate or a reset gate of an output portion. Related Art Figure 4 discloses a single metal made shield film 155 that shields only a portion of an output gate 141 and fails to shield a reset gate 142. Unlike Applicant’s claim 1, nowhere does Related Art Figure 4 disclose or suggest entirely shielding at least an output gate or a reset gate of an output portion.

Ronzani et al. also fails to disclose or suggest a metal made shield film that entirely shields at least an output gate or a reset gate of an output portion. Therefore, Related Art Figure 4 in view of *Ronzani et al.* still fails to disclose or suggest Applicant’s claim 1.

Claim 2 depends directly from claim 1 and is therefore allowable for at least the same reasons that claim 1 is allowable.

Applicant respectfully submits the rejection has been overcome and requests that it be withdrawn.

B.) Rejection of claim 3 under 35 U.S.C. §103(a) as being unpatentable over Related Art Figure 4 in view of *Ronzani et al.* and further in view of *Haga et al.*:

Applicant respectfully disagrees with the rejection.

Similar to claim 1, Applicant’s claim 3, as amended, claims an organic film that entirely shields at least an output gate or a reset gate of an output portion of a solid-state imaging device.

As discussed above, Related Art Figure 4 in view of *Ronzani et al.* fails to disclose or suggest shielding at least an output gate or a reset gate of an output portion. *Haga et al.* also fails to disclose or suggest shielding at least an output gate or a reset gate of an output portion.

Therefore, Related Art Figure 4 in view of *Ronzani et al.* and further in view of *Haga et al.* still fails to disclose or suggest claim 3.

Applicant respectfully submits the rejection has been overcome and requests that it be withdrawn.

CONCLUSION

In view of the foregoing, it is submitted that claims 1-3 are patentable. It is therefore submitted that the application is in condition for allowance. Notice to that effect is respectfully requested.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

Please amend claims 1, 2, and 3 as follows:

1. (Twice Amended) A solid-state imaging device having an output portion connected to an output end of a horizontal transfer register, the output portion having a gate structure including an oxide film and a nitride film, the solid-state imaging device comprising:

upper layer films allowing ultraviolet rays having a wavelength of 400 nm or less to pass therethrough; [and]

a first metal made shield film formed in such a manner as to cover a region of said gate structure including an oxide film and a nitride film, [excluding] being disposed above a light receiving portion and a transfer portion, of said solid-state imaging device; and

a second metal made shield film formed in such a manner as to cover a region of said gate structure including the oxide film and the nitride film, entirely shielding at least an output gate or a reset gate of an output portion, of said solid-state imaging device.

2. (Amended) A solid-state imaging device according to claim 1, wherein said second metal made shield film has an opening at a position directly over a floating diffusion region of said solid-state imaging device.

3. (Twice Amended) A solid-state imaging device having an output portion connected to an output end of a horizontal transfer register, the output portion having a gate structure including an oxide film and a nitride film, the solid-state imaging device comprising:

upper layer films allowing ultraviolet rays having a wavelength of 400 nm or less to pass therethrough; and

an organic film capable of absorbing said ultraviolet rays, said organic film being formed in such a manner as to cover a region of said gate structure including [an] the oxide film and [a] the nitride film, [excluding a light receiving portion and a transfer portion]entirely shielding at least an output gate or a reset gate of an output portion, of said solid-state imaging device.